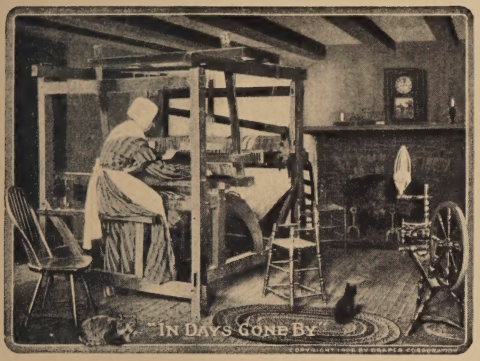
COTTON CHATS

DRAPER CORPORATION
HOPEDALE, MASSACHUSETTS



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TRADE-MARK REG. U.S. PAT. OFF.
DRAPER CORPORATION
HOPEDALE MASS.

No. 223. MAY 1921.

THE AUTOMATIC LOOM

The demand of modern industry to increase quantity of production without sacrifice of quality has led to the development of a novel type of loom which will undoubtedly stand forth as the most enduring contribution to the weaving art of this generation. The great decrease in the number of individuals necessary to operate a definite area of looms, wrought by the transformation of the hand loom into the power driven loom, has been further augmented by the realization during the closing decade of the last century of a weaving structure which will supply man's primal needs with only an occasional demand for human supervision.

A radical departure from the normal path of development, this loom has revolutionized the weaving art as extensively as did the introduction of the power loom; has driven the unprogressive manufacturer who resisted its almost universal adoption out of competition for the markets of the world; and hasgiven to its pioneer inventor, Northrop,

an abiding fame in the textile art as distinctive as that enjoyed by those other pioneers, Cartwright and Jacquard.

The transition from the hand loom to the power loom had increased the individual's usefulness and capacity in the weaving room more than a hundred fold, but the economic desire to eliminate still further the manual element in the weaving art was as potent after the power loom had reached its high state of development, as it was in the days when the hand loom was used exclusively.

From the inception of the power loom down to thirty years ago, each loom required the attentive and watchful supervision of the operative and though such condition was an enormous economic gain over the hand loom with its human intermediaries, advancing civilization, as the ally and friend of progress, compelled further efficient change.

Increased production became the ever urgent objective. The obstacle of that period resided in the size of the running shuttle which limited the amount of the shuttle contents, the number of yards on the bobbin. A comparatively short interval of time elapsed before the loom stopped from exhaustion of the yarn mass, much of the weaver's time was consumed in refilling the shuttle and in restarting the loom, and much available operating time was wasted in the stopping periods. To overcome this obstacle was the problem.

The processes of change are invariably slow and slight. No better evidence of which can be found than in the long and immemorial history of the weaving art itself. The solution of the problem lay along automatic lines. To change, however, from the human controlled loom to an automatically controlled loom

would be nothing less than a jump, but the era of labor saving devices was already in full swing and the weaving art did not escape the effects of the inventive revolution out of which evolved so many striking examples of inventive genius, not the least of which was the automatic or weft replenishing loom, a distinctively American creation.

The automatic loom is exploited in the trade periodicals without amplification, but outside the trade the meaning of the qualifying term is misleading. After seeing the modern power loom of today in the operation of weaving a Wilton carpet, each of the various and many parts going through its cycle in timed relation to the other mechanisms, the question could well be asked, "Why is not such a loom automatic?" It is, but the term appears to be limited to the loom equipped with self-replenishing mechanism and other thread controlled devices, the absence of which would tend to destroy the worth of the replenishing feature.

Thirty years ago the weaver was forced to stand at the loom to keep watch on the work, and when the shuttle was exhausted and the loom consequently stopped, it devolved upon him to replace the shuttle with a properly replenished one and then restart the loom. In the event that he did not anticipate the stopping, the loom was forced to remain idle until he replaced the empty bobbin with a full one and while he often exhausted his patience in the shuttle threading.

Today, after a period of rapid and intensive development of the automatic loom, he can attend as many as twenty automatic looms, and if the stock or raw material is running well, he can often relax for long periods in the course of the day, a

circumstance which is not objectionable but rather desirable in these days of improved human relationship between capital and labor. What the weaver did by hand in keeping the running shuttle supplied with weft, the automatic loom does by machinery but without stoppage of the loom. Quantity, therefore, is increased, the cost of production is reduced, and a better grade of fabric is secured.

Though this automatic mechanism is well known to the textile trade, by which it has long been recognized as an invention of indisputable merit, its presentation in these pages is warranted not only as a novel structure, which is distinctive and revolutionary by reason of its accomplishing by machinery what had heretofore been considered only within the realm of human power, but as an inventive product which is typical of the age in which we live, and as representative of this commercial period of civilization, wherein there is manifest in every field of industry a ceaseless and intensive striving to substitute the automatic element for the manual and to release man to a sole supervisory dominion over mechanism which has been made to bend to his will.

The above is taken from an article by Thomas J. Thompson, appearing in the May issue of the Journal of the Patent Office Society, Washington, D. C.

The many changes in working conditions brought about by the recent war, and especially the reduced hours of labor per week in textile mills, emphasize the importance of automatic machinery in all lines of cotton manufacture. As the weaving is the largest labor item in the cost of the cloth, it follows that the Northrop loom which saves from one-half to three-quarters of such labor, becomes more and more a necessity.